

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P904709

Luminaire Tested: DFN2DIP-TR4F0-080D090US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904709
REPORT IS A COMBINATION OF REPORTS P901988 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D090US830-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

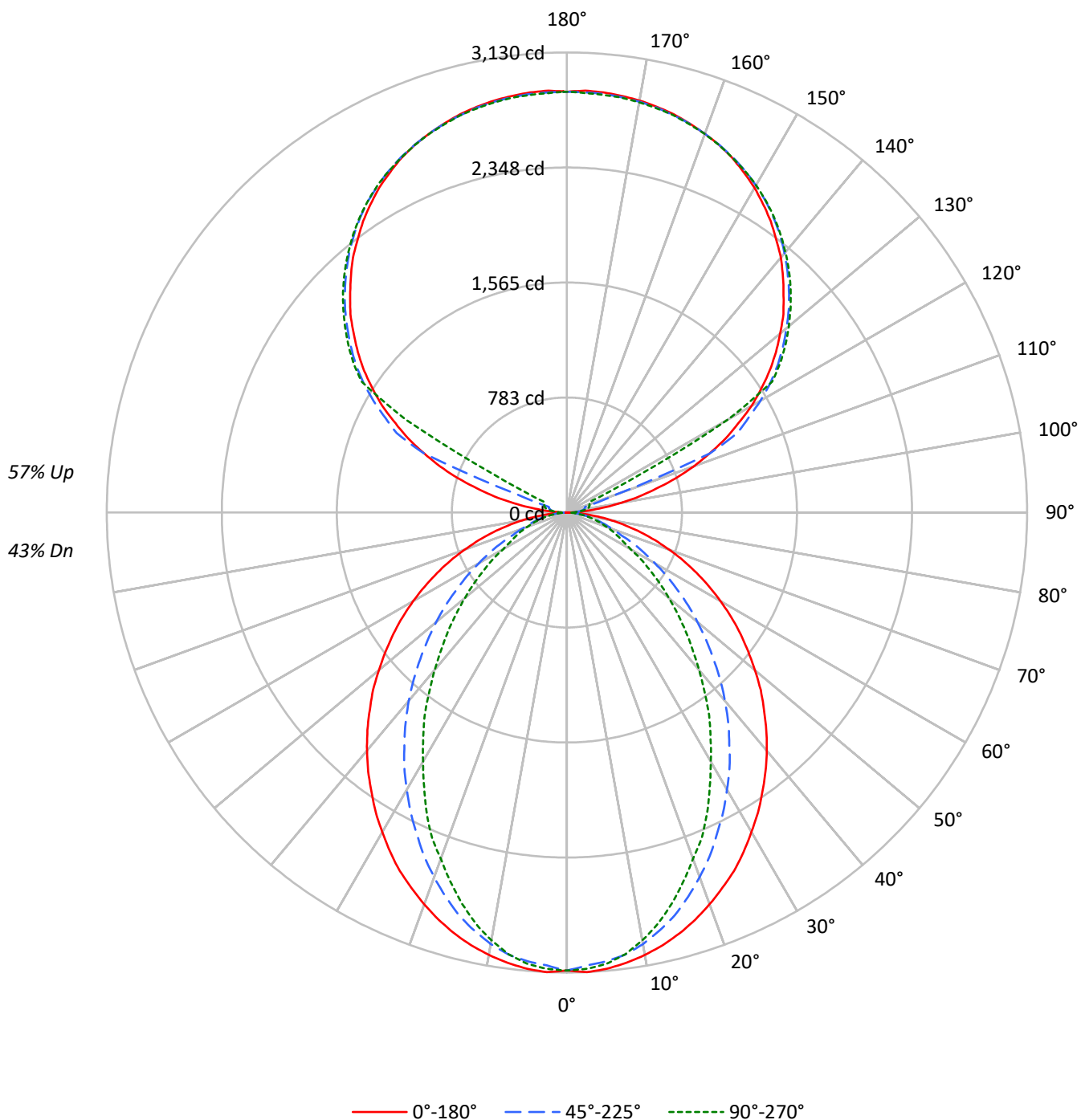
Lumens per Lamp: N/A
Luminaire Lumens: 14807.4 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 142.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50
1	97	93	89	86	88	85	82	79	70	68	66	57	56	54	45	44	43
2	88	81	75	71	81	75	70	65	62	59	55	51	48	46	40	38	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32
4	74	64	56	50	68	59	52	47	49	44	40	40	37	34	32	30	28
5	68	57	49	43	62	53	46	41	44	39	35	36	33	30	29	27	24
6	63	51	43	38	57	47	40	35	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	22	19
8	54	42	35	30	49	39	32	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2476	2476	2476
5°	2480	2436	2452
10°	2455	2389	2372
15°	2421	2310	2249
20°	2377	2201	2097
25°	2331	2079	1951
30°	2270	1954	1766
35°	2209	1819	1603
40°	2148	1680	1416
45°	2077	1526	1247
50°	2003	1370	1081
55°	1926	1203	923
60°	1837	1029	759
65°	1735	852	683
70°	1611	687	618
75°	1455	605	562
80°	1230	508	487
85°	857	339	366

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2077 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.1	2.0
10°-20°	801.8	5.4
20°-30°	1125.7	7.6
30°-40°	1227.1	8.3
40°-50°	1127.8	7.6
50°-60°	885.7	6.0
60°-70°	576.5	3.9
70°-80°	296.8	2.0
80°-90°	80.8	0.5
90°-100°	94.4	0.6
100°-110°	351.9	2.4
110°-120°	933.3	6.3
120°-130°	1548.0	10.5
130°-140°	1644.3	11.1
140°-150°	1528.2	10.3
150°-160°	1228.6	8.3
160°-170°	791.7	5.3
170°-180°	272.5	1.8
0°-30°	2219.6	15.0
0°-40°	3446.7	23.3
0°-60°	5460.2	36.9
0°-90°	6414.4	43.3
90°-120°	1379.6	9.3
90°-150°	6100.2	41.2
90°-180°	8393.0	56.7
0°-180°	14807.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3116	3116	3116	3116	3116	
5°	3116	3102	3066	3091	3083	296
15°	2964	2933	2837	2784	2756	835
25°	2691	2600	2414	2299	2256	1237
35°	2318	2174	1926	1749	1686	1451
45°	1895	1706	1410	1210	1142	1464
55°	1441	1221	916	747	694	1288
65°	973	744	491	395	386	965
75°	519	321	226	206	203	549
85°	121	62	54	54	54	139
90°	2	25	41	52	56	14
95°	135	66	81	91	89	159
105°	630	692	126	149	157	673
115°	1191	1226	1278	319	170	1173
125°	1684	1711	1750	1765	1771	1502
135°	2084	2117	2136	2157	2152	1610
145°	2418	2415	2451	2465	2455	1512
155°	2662	2644	2668	2681	2664	1227
165°	2805	2792	2799	2813	2799	792
175°	2869	2854	2859	2873	2852	273
180°	2863	2863	2863	2863	2863	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3116.4	3116.4	3116.4	3116.4	3116.4
2.5°	3130.5	3116.4	3085.3	3113.7	3108.0
5°	3116.4	3102.4	3065.5	3091.0	3082.6
7.5°	3091.0	3074.2	3034.7	3045.8	3031.7
10°	3057.1	3037.4	2981.2	2972.5	2955.7
12.5°	3015.0	2989.6	2913.2	2896.4	2865.3
15°	2964.1	2933.0	2837.2	2783.7	2755.5
17.5°	2904.8	2859.7	2741.2	2679.3	2634.0
20°	2837.2	2780.7	2639.8	2569.5	2507.2
22.5°	2763.9	2699.0	2535.3	2439.6	2397.4
25°	2690.6	2600.3	2414.1	2298.7	2256.2
27.5°	2603.2	2507.2	2301.3	2168.8	2103.8
30°	2510.2	2402.7	2177.2	2033.5	1957.2
32.5°	2419.8	2290.0	2059.0	1889.6	1819.0
35°	2318.4	2174.4	1926.4	1748.7	1686.4
37.5°	2219.6	2064.4	1802.2	1607.4	1537.1
40°	2115.3	1946.2	1672.4	1472.2	1398.8
42.5°	2008.1	1827.7	1542.8	1334.0	1263.6
45°	1895.3	1706.2	1410.2	1209.8	1142.2
47.5°	1788.2	1588.0	1283.4	1082.9	1021.0
50°	1669.6	1469.5	1159.2	964.4	905.4
52.5°	1553.9	1342.3	1040.7	854.6	801.1
55°	1441.1	1221.2	916.5	747.4	693.9
57.5°	1325.6	1099.9	806.7	648.8	603.5
60°	1207.0	981.5	690.9	547.2	502.1
62.5°	1091.6	865.9	592.2	456.9	434.5
65°	973.1	744.4	490.7	395.0	386.3
67.5°	860.3	631.7	395.0	346.8	338.5
70°	741.8	521.9	327.1	298.9	287.6
72.5°	629.0	420.1	273.5	251.1	245.3
75°	518.9	321.4	225.6	205.9	203.2
77.5°	409.1	228.3	177.8	166.4	160.7
80°	307.3	163.7	135.3	124.1	124.1
82.5°	214.2	110.1	93.0	87.4	87.4
85°	121.2	61.9	53.5	53.5	53.5
87.5°	45.1	22.4	22.4	19.8	19.8
90°	2.0	24.9	41.3	51.9	55.8
92.5°	51.9	43.5	49.7	53.9	55.8
95°	134.6	66.2	80.7	91.2	89.1
97.5°	242.3	72.6	105.6	111.9	113.9
100°	366.7	82.9	118.1	134.6	138.7
102.5°	503.3	499.4	122.2	144.9	151.3
105°	629.7	692.0	126.4	149.1	157.4
107.5°	776.8	828.5	130.6	153.3	161.6
110°	917.8	961.1	362.6	155.4	163.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1050.4	1087.5	1052.3	159.4	165.8
115°	1191.1	1226.2	1278.2	319.1	169.9
117.5°	1313.3	1354.7	1390.1	1093.7	551.0
120°	1450.1	1481.1	1518.5	1543.3	1263.7
122.5°	1566.0	1599.2	1640.8	1653.0	1655.3
125°	1684.0	1711.1	1750.5	1765.0	1771.1
127.5°	1791.8	1820.8	1852.1	1872.7	1874.7
130°	1893.4	1926.7	1949.3	1972.1	1970.2
132.5°	1997.0	2024.0	2046.6	2065.4	2063.4
135°	2084.1	2117.2	2135.7	2156.6	2152.5
137.5°	2175.1	2199.9	2220.8	2241.5	2235.3
140°	2264.1	2280.9	2303.5	2322.1	2311.9
142.5°	2338.9	2353.4	2380.2	2396.7	2386.4
145°	2417.6	2415.4	2450.6	2465.1	2454.8
147.5°	2485.8	2479.6	2514.8	2525.2	2517.0
150°	2552.2	2537.7	2570.9	2583.1	2572.9
152.5°	2608.0	2591.5	2622.5	2635.1	2620.6
155°	2661.9	2643.5	2668.2	2680.6	2664.1
157.5°	2705.5	2689.0	2707.6	2722.2	2705.5
160°	2742.8	2730.3	2742.8	2755.1	2740.6
162.5°	2775.8	2763.4	2773.8	2788.3	2769.7
165°	2804.8	2792.5	2798.7	2813.2	2798.7
167.5°	2827.7	2815.2	2821.5	2836.0	2817.4
170°	2846.4	2833.8	2838.0	2852.5	2833.8
172.5°	2858.7	2846.4	2850.5	2865.0	2846.4
175°	2869.0	2854.5	2858.7	2873.2	2852.5
177.5°	2873.2	2858.7	2860.9	2875.4	2856.8
180°	2862.9	2862.9	2862.9	2862.9	2862.9

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	9.63	10.41	10.65	11.44	12.80	5.61	6.39	6.63	7.41	8.78
	3H	11.31	12.00	12.34	13.04	14.42	6.79	7.49	7.82	8.52	9.91
	4H	11.91	12.57	12.95	13.61	15.00	7.24	7.90	8.28	8.94	10.33
	6H	12.33	12.94	13.38	13.98	15.38	7.56	8.17	8.61	9.21	10.61
	8H	12.46	13.03	13.51	14.09	15.49	7.65	8.23	8.71	9.28	10.68
	12H	12.52	13.06	13.58	14.11	15.54	7.69	8.24	8.75	9.29	10.71
4H	2H	9.65	10.30	10.69	11.34	12.73	6.20	6.86	7.24	7.89	9.28
	3H	11.47	12.02	12.53	13.08	14.49	7.54	8.09	8.60	9.15	10.56
	4H	12.16	12.66	13.22	13.72	15.15	8.09	8.59	9.15	9.65	11.07
	6H	12.67	13.10	13.74	14.18	15.60	8.51	8.94	9.58	10.01	11.44
	8H	12.85	13.25	13.92	14.32	15.76	8.64	9.04	9.71	10.11	11.55
	12H	12.94	13.30	14.03	14.39	15.83	8.70	9.06	9.79	10.15	11.59
8H	4H	12.12	12.53	13.20	13.60	15.03	8.37	8.77	9.44	9.84	11.28
	6H	12.69	13.02	13.78	14.13	15.57	8.88	9.22	9.98	10.33	11.76
	8H	12.91	13.20	14.01	14.29	15.75	9.08	9.37	10.18	10.46	11.92
	12H	13.04	13.30	14.15	14.39	15.88	9.19	9.45	10.30	10.54	12.03
12H	4H	12.07	12.44	13.16	13.52	14.96	8.37	8.73	9.46	9.82	11.26
	6H	12.66	12.96	13.77	14.05	15.51	8.93	9.22	10.03	10.32	11.77
	8H	12.88	13.14	13.99	14.23	15.72	9.14	9.40	10.25	10.49	11.98

END OF REPORT